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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/643,179

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Gregory C. Copeland

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TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

CORRIELUS, JEAN B

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

06/15/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/643,179	<b>Applicant(s)</b> COPELAND, GREGORY C.	
	<b>Examiner</b> Jean B. Corrielus	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5/6/09.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-10, 30-35 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-3, 15-29, 36 and 37 is/are rejected.
- 7) ☒ Claim(s) 11-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 15-27 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent<sup>1</sup> and recent Federal Circuit decisions<sup>2</sup> indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor is positively tied to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. For example the method including steps of applying repeating amplifying is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine. The claim fails to recite **any corresponding hardware** in combination with the method step(s) so as to effectively tie the process claim with a statutory class of invention, i.e. **a particular apparatus**.

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<sup>1</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

<sup>2</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

***Claim Objections***

3. Claims 11-14 are objected to because of the following informalities: claim 11 line 2, “plurality of” should be replaced by “at least two” for consistency. Similar comment applies equally to claim 13 and claim 14.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 36-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36, recites “a plurality of cancellation pulse generators, (see lines 2-3) however the claim fails to recite the necessary connection between the cancellation pulse generators. in addition” **the at least one of** a plurality of peak detection and cancellation circuits” lacks of proper antecedent basis. Shouldn’t such limitation be replaced by “each of the at least three peak detection and cancellation circuits”? Line 8, it is unclear as to which one of the “plurality of peak detection circuits” the limitation “peak detector circuit” refers to. Line 12, “the filter generator” lacks of proper antecedent basis.

Note that any claim whose base claim is rejected is likewise rejected.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 15 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunton US Patent No. 7,003,017.

As per claim 1, Hunton discloses an integrated circuit (note fig. 6, element 122), comprising: a plurality of peak detection and cancellation circuits (note fig. 11, and fig. 9) arranged in a sequence, a first peak detection and cancellation circuit (320-1) having an input coupled to receive a spread spectrum symbol stream (I(t)), a second peak detection and cancellation circuits 320-2 having an input coupled to the output of the first peak detection and cancellation circuit 320-1; a third peak detection and cancellation circuit 320-3 having an input coupled to the output of the second peak detection and cancellation circuit 320-2, each peak detection and cancellation circuit 320 for applying an adjustment (cancellation pulse) (note output of circuit 152 to a first input of combiner 168) to a received symbol stream (note output of the delay 166, i.e. second input of combiner 168) responsive to detecting a peak amplitude in the received symbol stream exceeding a threshold (note col. 12, lines 35-43, and for presenting a peak adjusted symbol (compressed symbol stream) including the received symbol

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stream and adjustment (cancellation pulse) at its output (note output 154 of combiner 168 that combines both the delayed stream and the adjustment).

As per claim 15, Hunton discloses a method comprising the steps of applying at least adjustment (one peak compression pulse) (note output of circuit 152, i.e., first input to combiner 168) to the spread spectrum signal (note output of delay device 166, i.e. second input to combiner 168) at a first peak sample point ( $t=0$ ), the magnitude of the signal at the first peak sample point exceeding a peak qualifying threshold (note col. 12, lines 35-43), to produce an output signal (peak-compressed symbol stream) (note output 154; repeating, at least twice, the applying step on the peak-compressed symbol stream (note fig. 11, stage 320-3); amplifying an analog modulated signal (note output of amplifier 130) corresponding to a peak-compressed symbol stream from the last of the repeated applying steps to produce the signal 132 to be transmitted.

As per claim 28, see claim 1. In addition, Hunton teaches that the system is a base station system see col. 7, lines 27-28 and a plurality of coders (note fig.6, 110-114) for generating a spread spectrum signal over a plurality of channels; a D/A converter 128 for converting the adjusted (compressed) symbol to analog; and a modulation circuit (134 and 136) for producing a modulated signal, corresponding to the analog signal, at a carrier frequency and power amplifier 130 for amplifying the modulated signal prior to transmission.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 16 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton et al in view of Uto et al US Patent No. 6,674,328.

As per claim 2, as applied to claim 1 above, Hunton et al teaches every feature of the claimed invention but does not teach the further limitation of an output limiter, coupled to the output of the last of the peak and cancellation circuits in the sequence for reducing residual peak amplitudes in the compressed symbol stream from the peak detection and cancellation circuits in the sequence. Uto et al teaches an output limiter 9 coupled to an output of a peak detector 7 and compensation stage 8 for limiting the offset compensation generated by the compensation circuit. Given that fact, it would have been obvious to one skill in the art to couple an output limiter to the output of the last of the peak and cancellation circuits in the sequence for reducing residual peak amplitudes in the compressed symbol stream from the peak detection and cancellation circuits in the sequence in order to meet DC bias condition of the positive phase input terminal and negative phase input terminal of the amplifier, see Uto col. 7, lines 61-64.

As per claims 16 and 29, respectively, see claim 2.

10. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton et al in view of Rakib et al US Patent No. 6,426,983.

As per claim 3, as applied to claim 1 above, Hunton et al teaches every feature of the claimed invention but does not teach the further limitation a digital down sampler for receiving the spread spectrum symbol stream and forwarding a subset of the symbols in

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the spread spectrum symbol stream to the input of the first of the peak detection and cancellation circuits. Rakib et al teaches a digital downsampler 34 coupled to the input of the peak detection and cancellation circuit 36. Given that fact, it would have been obvious to one skill in the art to couple a digital downsampler for receiving the spread spectrum symbol stream and forwarding a subset of the symbols in the spread spectrum symbol stream to the input of the first of the peak detection and cancellation circuits in order to enhance the processing operation performed by the peak detector and canceller since less data would have been provided to the input of the detector and canceller.

As per claim 17, see claim 3.

### ***Allowable Subject Matter***

11. Claims 4-10, 30-35 and 38 are allowed.
12. Claims 36-37 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
13. Claims 11-14 would be allowable if amended to overcome the objection set forth above.

### ***Response to Arguments***

14. Applicant's arguments filed 5/6/09 have been fully considered but they are not persuasive. It is alleged that Hunton does not teach a third peak detection and cancellation circuit. However, Hunton clearly teaches in fig. 11 a third peak detection and cancellation circuit 320-3. Any other points of argument with respect to such a limitation are moot. With respect to the 101 rejection applicant argues that the limitation



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“transmitting a spread spectrum communication signal represent an actual physical signal. However, examiner notes that signal per se is abstract not physical. Applicant further argues that the signal is transformed into a different state or things. However examiner note that signal processing does not result in the signal being transform into a different state or thing since the transformation on a signal still produces a signal. In addition, amplifying a signal does not result in a transformation in a different state or thing because the amplified signal is still a signal per se. The claim (s) fails to recites any hardware to effectively tie the process claim with a particular apparatus.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B Corrielus/  
Primary Examiner  
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